REMARKS

The Examiner objects to claim 19 under 37 CFR 1.75(c) as being of improper dependent form. Applicant submits that this objection is incorrect. Dependent claim 19 requires the permanent adhesive to be a specific type of adhesive, namely a binder adhesive.

The Examiner rejects claim 9 under 35 U.S.C.§112, second paragraph, as being indefinite. Claim 9 has been amended to overcome this rejection.

The Examiner rejects claims 1-5, 16-18, 54, and 66 under 35 U.S.C.§103(a) as being unpatentable over Masui et al. (U.S. 5,053,179) in view of Abrams (PCT WO 90/09289); claim 7 under Section 103(a) over Masui et al. in view of Abrams and further in view of Banfield et al. (U.S. 5,922,436); claims 8, 11-14, 19-21, 55, and 67 under Section 103(a) over Masui et al. in view of Abrams; claim 9 under Section 103(a) over Masui et al. in view of Abrams; claims 57-65 and 69 under Section 103(a) over JP 560855524 in view of Abrams.

Applicant respectfully traverses the Examiner's rejections. It is respectfully submitted that none of the above references, individually or collectively, teach or suggest at least the following italicized language in each of the independent claims:

> 1. A method of decorating a molded article comprising:
> providing a transfer having a flocking layer, a release sheet on one side of the flocking and a layer of a permanent adhesive on an opposite side of the flocking *to adhere the transfer to the molded article*;
> *securing the release sheet to an interior wall of a mold in which the article is made;* and
> *molding the part such that the resin contacts the layer of permanent adhesive, wherein the temperature of the resin in the mold is less than a melting point of the permanent adhesive;*
> cooling the mold;
> ejecting the part; and
> removing the release sheet from the transfer.
>
> 8. A method of decorating a molded article comprising:

coating a release sheet with a release adhesive;

flocking flock into said release adhesive by embedding a first end of said flock into the release adhesive to result in at least one pattern of flock arranged to form a predetermined design adhered to said release sheet;

applying a permanent adhesive to an opposite side of the flocking;

affixing said release sheet to the interior surface of a mold; and

molding an article over said permanent adhesive in said mold; said permanent adhesive permanently bonding said flock to said article, wherein, under the thermal conditions experienced by the permanent adhesive during the molding step, the permanent adhesive does not liquefy and ooze out around the flock.

22. (Twice Amended) A method for producing a molded article, comprising:

providing a flocked structure, the flocked structure comprising a plurality of flock fibers adhered to a permanent adhesive;

positioning the flocked structure in a part of a mold;

introducing a molten resin, at a resin temperature, into the mold after closure of the mold while the flocked structure is positioned in the closed mold; and

after solidification of the resin, removing a molded article comprising the flocked structure and the solidified resin from the mold, *wherein a melting temperature of the permanent adhesive is greater than the maximum temperature experienced by the permanent adhesive during the introducing step.*

Masui et al.

Masui et al. is directed to a process for producing a multilayer molded article which includes supplying at least one piece of skin material having a desired shape and a resin melt between unclosed upper and lower molds and closing the molds to form a multilayer molded article including the thermoplastic resin and the skin material. The skin material is lifted by a rod to a position at which the skin material contacts a cavity surface of the upper mold. The resin is then supplied between the upper and lower molds and the rod is returned to a determined position before the molding is complete. As noted by the Examiner, Masui et al. does not teach using a film having a flocking layer, a release layer, and a layer of binder on an opposite side of the flocking and removing a release sheet from a transfer.

PCT WO 90/09289

The Abrams PCT is directed to a method of making an applique that involves applying a release adhesive 6 upon a release sheet 4, flocking flock 8 onto the release adhesive 6, and applying a binding adhesive 10 to free ends of the flock 8. A hot melt adhesive 12 is thereafter applied to the binding adhesive 10. The binder adhesive is preferably an acrylic dispersion which is cross-linkable at higher temperatures. The reference does not teach what the "higher" temperatures are. Nonetheless, the Examiner states that "a cross-linked substance cannot be reshaped or melted to be reshaped." (Office Action at page 4.)

Applicants disagree. The Examiner's statement, though true for thermosetting materials, necessarily depends on the degree of cross-linking experienced in a material for other materials. For example, an acrylic resin refers to "[*t*]*hermoplastic* polymers or copolymers of acrylic acid, methacrylic acid, esters of these acids, or acrylonitrile." (*Hawley's Condensed Chemical Dictionary*, 12th ed., revised by Richard J. Lewis, Sr., p. 19, 1993 (emphasis supplied)). It is well known that thermoplastic materials soften when heated, harden when cooled, and soften when reheated. The melting process is therefore repeatable after curing. (SPI Sheet Producers Division: Thermoplastic vs. Thermoset attached hereto as Exhibit "C".) Hot melt adhesives are thermoplastics too. (Etherington & Roberts Dictionary attached hereto as Exhibit "B".) The solidification of hot melt adhesives therefore are also reversible. According to the Hot Melt Adhesives Technology Review attached hereto as Exhibit "D":

> Hot melt adhesives have some limitations that must be recognized. Hot melts cannot be used with heat sensitive substrates; the adhesive bonds lose strength at high temperatures; chemical resistance may be lacking with some types of hot melts; *and exposure to high temperature environments can cause the adhesive to melt. Consequently, hot melt adhesives are inappropriate in situations where these limitations cannot be avoided.* For example, hot melts should not be used on a substrate that would be near a heat source, such as a kitchen

> cabinet that would be placed near an oven. However, innovations in hot melts are removing some of these limitations.

(Emphasis supplied.)

The reversibility of solidification for acrylics is supported by the characteristics of acrylic adhesives generally. Acrylic adhesives are known to have a wide range of melting points. In the Material Safety Data Sheet attached hereto as Exhibit "A", the melting point for the Eukitt Mounting Medium, which is a xylene-based liquid acrylic resin adhesive, is -13°F, which is well below room temperature.

The Examiner's statements that the binder adhesive and/or hot melt adhesive in the transfer of Abrams necessarily has a melting point higher than the melting point in the mold is simply not true. It depends on the adhesive formulation and the operating conditions in the mold. These variables are not disclosed by Abrams. Thus, there is no incentive of one of ordinary skill in the art to place the transfer of Abrams in a mold to produce a molded article, let alone to believe that the transfer would be thermally stable in the mold.

JP 560855524 and Banfield fail to overcome the deficiencies of Masui et al. and Abrams.

Accordingly, the pending claims are allowable.

The dependent claims provide further reasons for allowance.

By way of example, claims 18, 20, and 60 are directed to a thermosetting adhesive as the permanent adhesive. Contrary to the Examiner's assertion that the use of a thermosetting adhesive is a "mere obvious matter of design choice", Applicants respectfully submit that such an adhesive is not obvious for the present application. Referring to Exhibit C, the substantial differences between thermoplastic and thermosetting resins adhesives are discussed. Thermosetting adhesives, unlike thermoplastic resins, solidify or "set" irreversibly when heated. While thermosetting and

thermoplastic resins are both plastics, there are significant differences between them. Exhibit C states:

> [D]esigners should be aware of the significant differences between the two main classes: thermoplastic and thermoset. Thermoset products resist compression set better than thermoplastics because of the way each is made. Heat and pressure fuse thermoplastic resins into a shape that is solidified by cooling. But reapplying enough heat and pressure - which occur in real world conditions - softens and deforms them. This is not the case with thermoset products, which harden by cross linking, forming a permanent three dimensional molecular structure. Subsequent heat and pressure cannot soften and deform them.

Due to substantial differences, the successful use of a thermoplastic adhesive in an application would not necessarily mean a thermosetting adhesive would also work and thus provide an incentive to one of ordinary skill in the art to use thermosetting adhesives in that application.

The Examiner's statements that the use of two injection pressures as required by claim 12, the use of a thermosetting adhesive in the molding art as required in claims 18, 20, and 60, and the the forming of the flocked structure into a nonplanar, three-dimensional shape before molding as required by claims 66 to 69 are well known are not supported by documentary evidence. It is well established that obviousness cannot be based on a finding of common knowledge unsupported by documentary evidence. *In re Lee*, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).

Regarding the requirement of claims 54-56 and 59 that the permanent adhesive be free of a hot melt adhesive, Abrams teaches in Figs. 1 and 2 the presence of a hot melt adhesive layer 12 (page 12, lines 6-8). Abrams further teaches that the hot melt adhesive may alternatively be incorporated into the binder adhesive layer 10 (page 12, lines 1-5). In any event, Abrams teaches that a hot melt adhesive must be present in the permanent adhesive. (See Abrams at page 6, lines 22-26, which states that "[f]or purposes of the present invention, the binding adhesive is a hot melt adhesive. . ."). Thus, Abrams teaches away from the claimed invention in which no hot melt adhesive is used.

Dependent claims 66 to 69 require the flocked structure to be formed into a nonplanar, three-dimensional shape before molding. This is done to resist shear forces exerted on the structure during molding. Masui et al. does not teach or suggest this step but rather teaches that the skin material is planar in shape (Figures 3 -14). Masui et al. thus *teaches away* from the use of a three-dimensional shape. It cannot therefore be combined with a teaching that a decorative surface is formed into a three-dimensional shape before molding.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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